

REQUEST FOR RECONSIDERATION

Claims 6-13 and 23 remain active in this application.

The claimed invention is directed to a food product comprising an oil composition and food.

Diglyceride compositions have gained interest based on a disclosed obesity-preventing effect. In addition, ω 3 type unsaturated fatty acids having at least 20 carbon atoms such as docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA), principle components of fish oil **triglycerides**, have been reported to have beneficial health properties. ω 3 Type unsaturated fatty acid have been reported to have very **poor oxidation stability** (page 2, lines 17-19 of the specification) while diglycerides of ω 3 type unsaturated fatty acids have exhibited very **high viscosities** (page 2, line 27 through page 3, line 5 of the specification). Accordingly, diglyceride containing compositions of ω 3 unsaturated fatty acids having good stability and viscosity are sought.

The claimed invention addresses this problem by providing a food product comprising 1-80 wt. % of an oil composition and food. The oil composition comprising 0.1 to 59.8 wt. % of triglyceride, 40 to 99.7 wt. % of diglyceride and 0.1 to 10 wt. % of monoglyceride, wherein the diglyceride component has 15-89.5 wt. % of ω 3 unsaturated acyl group having at least 20 carbon atoms with 10-84.5 wt% of monoenoic acyl groups, based on the weight of acyl groups in the diglyceride. Applicants have discovered that an oil composition comprising triglyceride, diglyceride and monoglyceride wherein the diglyceride has such a distribution of ω 3 unsaturated fatty acids and monoenoic acyl groups provide for an oil composition having **good stability and viscosity**. Such a food product is nowhere disclosed or suggested in the cited art of record.

The rejection of claims 6, 7, 9, 10, 11 and 23 under 35 U.S.C. § 103(a) over Yasukawa et al. (U.S. 4,976,984) in view of Igarashi (U.S. 6,159,507) and further in view of Tanaka et al. (U.S. 5,78,897) is respectfully traversed.

None of the cited references disclose or suggest the claim limitation of an oil composition comprising 40-99.7 wt. % of diglyceride having 15 to 89.5 wt.% of ω -3 unsaturated acyl groups having at least 20 carbon atoms and 10-84.5% wt.% of monoenoic acyl groups.

Yasukawa et al simply describes an edible oil comprising diglycerides and a phospholipids as having good stability against oxidation and heat, little greasy or oily distastefulness and no heavy feeling in the stomach when taken in a raw state such as when contained in a salad dressing or mayonnaise (column 1, lines 6-19). The reference has been principally cited for a disclosure of a distribution of triglyceride, diglyceride and monoglyceride as claimed (e.g. examples 2 and 3) as well as for an unsaturated fatty acid content of at least 70 wt.% of **all glyceride** fatty acid residues.

Page 6 of the official action recognized the deficiency of the reference to disclose a diglyceride content of monoenoic acids. However, in addition to this deficiency, the reference fails to disclose a diglyceride having 15-89.5 wt. % of ω -3 unsaturated acyl group having at least 20 carbon atoms.

Page 5 of the official action attempts to correlate a disclosure of an unsaturated fatty acid content of at least 70 wt.% of **all glyceride** fatty acid residues with the claim limitation of a diglyceride having 15-89.5 wt. % of ω -3 unsaturated acyl group having at least 20 carbon atoms. Such a broad disclosure as to an unsaturated fatty acid content for the entirety of the glycerides fails to suggest a diglyceride specific amount of ω -3 unsaturated acyl group having at least 20 carbon atoms.

In making an obviousness determination, Office personnel should consider the number of variables which must be selected or modified, and the nature and

significance of the differences between the prior art and the claimed invention. See, e.g., *In re Jones*, 958 F.2d 347, 350, 21 USPQ2d 1941, 1943 (Fed. Cir. 1992) MPEP 2144.08 II A 4 (c).

The vastness of the disclosure of unsaturated fatty acids fail to suggest the narrow selection of 15-89.5 wt. % of ω -3 unsaturated acyl group having **at least 20 carbon atoms**. It would not have been obvious to have selected ω -3 unsaturated acyl group having **at least 20 carbon atoms** from the enormity of the description of unsaturated fatty acids, such as those having less than 20 carbon atoms as well as from those having unsaturations at the ω -6 positions as well as other sites of unsaturation. The disclosure of unsaturated fatty acids is just too general to suggest any particular members therein.

Further the reference fails to suggest a content of free fatty acids of at most about 5%. This is a claim limitation which is not addressed in the official action.

In contrast, the claimed invention is directed to a food product comprising 1-80 wt. % of an oil composition and food wherein the oil component comprises about 40 to 99.7 wt. % of diglyceride wherein the diglyceride component has **15-89.5 wt. % of ω -3 unsaturated acyl group having at least 20 carbon atoms** with **10-84.5 wt% of monoenoic acyl groups** based on a weight of acyl groups in said diglyceride and wherein the composition contains at most about 5% of free fatty acids.

The basic deficiencies of the primary reference are not cured by Igarashi or Tanaka et al.

The examiner cites to Igarishi for a disclosure of a desire to adjust the ratio of ω 6 unsaturated fatty acids to ω 3 unsaturated fatty acids and concludes that there would have been **motivation to modify** the teaching of Yasukawa et al. of a diglyceride composition in order to improve its therapeutic effect/disease preventive effects.

Applicants note that contrary to the assertions made on page 7, lines 1-2 of the official action as to the suggestion of a food composition comprising a unsaturated fatty acid balance

modifier **and** at least one unsaturated fatty acid, the cited disclosure at column 2, lines 49-53 only describes an unsaturated fatty acid balance **modifier** in the absence of omega-3 unsaturated fatty acid.

Thus, the present invention provides a **food composition** containing an omega-6/omega-3 unsaturated fatty acid balance **modifier** whose active ingredient is a dioxabicyclo(3.3.0)octane derivative, and to an omega-6/omega-3 unsaturated fatty acid balance **modifier**.

None the less, there is no suggestion of an oil component comprises about 40 to 99.7 wt. % of diglyceride wherein the diglyceride component has **15-89.5 wt. % of ω -3 unsaturated acyl group having at least 20 carbon atoms with 10-84.5 wt% of monoenoic acyl groups** based on a weight of acyl groups in said diglyceride. To the contrary, a reference which describes an agent which can modify the balance of omega-6/omega-3 unsaturated fatty acid would not motivate one of skill in the art to alter the omega-3 unsaturated fatty acid of a diglyceride component of a food composition since the reference indicates that adjustment of such a ratio may be induced chemically. Why would one of ordinary skill in the art alter the content of omega-3 unsaturated fatty acid of a diglyceride composition when a ratio of omega-6/omega-3 unsaturated fatty acid may be adjusted by consumption of a balance modifier?

Further, the mere suggestion to adjust the **ratio** of ω 6 unsaturated fatty acids to ω 3 unsaturated fatty acids in order to maintain homeostasis of the body, fails to provide any suggestion of a content of 15-89.5 wt. % of ω 3 unsaturated acyl group having at least 20 carbon atoms and 10-84.5 wt% of monoenoic acyl groups.

The rational provide in the official action to increase the content of ω 3 unsaturated fatty acids for expected health benefits would lead one **beyond a content of 89.5 wt.%**. In short, following the rational in the official action, if some ω 3 unsaturated fatty acid were good, then amount of ω 3 unsaturated fatty acid greater than 89.5 wt. % would be better.

Thus, the cited references fails to make obvious the narrow range of only 10-89.5 wt. % of ω 3 unsaturated fatty acids.

The additional disclosure of Tanaka et al is similarly flawed.

Tanaka et al. identifies an emulsifier containing cis-unsaturated monoglyceride as forming stabile emulsions independent of the presence of a sizing agent, a trans-unsaturated monoglyceride exhibited poor emulsion stability alone but good stability in the presence of sizing agent but that a saturated monoglyceride did not contribute to the emulsion stability (column 2, lines 8-21). The reference further identifies saturated monoglycerides, diglycerides, sucrose fatty acid esters, sorbitan fatty acid esters, propylene glycol fatty acid esters, organic acid monoglycerides or lecithins as emulsifiers for an oil and fat emulsion (column 4, lines 16-23). There is no suggestion of any monoenoic acid content for a **diglyceride**. To the contrary, the reference describes the specific effect of unsaturated **monoglycerides** to behave as emulsifiers. The reference provides no suggestion as to the unsaturated fatty acid content of diglycerides. Why would one of ordinary skill in the art modify a diglyceride with the fatty acid of a monoglyceride emulsifier when the monoglyceride fatty acid has been demonstrated to provide an emulsifying effect?

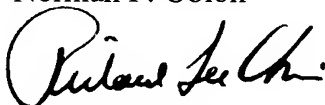
The remaining rejections of claim 12 based on the additional disclosure of Nieuwenhuyzen et al. of claim 8 based on the additional disclosure of Szczesniak et al. and of claim 13 based on the additional disclosure of Young et al. are similarly flawed as the cited combination of references fails to describe the claimed diglyceride fatty acid content in terms of ω 3 unsaturated fatty acids or monoenoic acyl groups. While the tertiary references may be used in support of food compositions containing an oil phase, these references fail to suggest the claimed diglyceride fatty acid content in terms of ω 3 unsaturated fatty acids or monoenoic acyl groups.

As the cited combination of references does not suggest the claim limitation of a diglyceride composition in which the fatty acids are of 15-89.5 wt. % of ω 3 unsaturated acyl group having at least 20 carbon atoms and 10-84.5 wt% of monoenoic acyl groups the claimed invention is not rendered obvious over this combination of references and withdrawal of the rejection under 35 U.S.C. § 103(a) is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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